Observation of Cosmic-rays with Photographic Emulsion. (I)

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trahlung effect of the secondary electrons was also considered, and found to be small.

The final results obtained were as follows. The inner diameter of the counter was 2 cm.

wall thickness in cm	energy of γ-ray quantum 12	20	25	30	34 (mc^2)
0.65	3.2 %	8.5 %	13.3 %	18.1 %	21.3 %
0.60	3.3	8.7	13.6	18.7	22.1
0.50	3.6	9.3	14.3	19.8	23.4
0.40	3.8	9.9	14.9	20.4	23.7
0.30	4.0	10.4	15.2	20.2	23.0
0.20	4.0	10.2	14.6	18.0	20.1

46. Observation of Cosmic-rays with Photographic Emulsion. (I)

Kiichi Kimura, Senzo Tokunaga, Kazunori Yuasa and *Ryutaro Ishiwari.*

A preliminary report on the observation of cosmic-rays with photographic emulsion was described. Eight sheets of Type N. T. B. plate presented by the Eastman Kodak Co., were exposed to cosmic-rays at the meteorological observatory of Mt. Norikura (2840 m) during 47 days this summer.

Though up to now only 1⅓ plates have been scanned, 261 cosmic-ray stars and several meson and many proton tracks have been observed. The distribution of the number of prongs per star is compared with the results of Cortini et al.[1] on Testa Grigia (3500 m) and Lattes et al.[2] on Pic du Midi (2800 m) as shown in the table.

Number of prong		2	3	4	5	6	7	8	9	≧5	Total
Stars/cc/day	Norikura	10.9	16.4	15.6	9.3	2.1	0.21	0.21	0.21	12.0	55.1
	Testa Grigia		5.04	4.11	1.91						14.22
	Pic du Midi									10.5	

1) G. Cortini and A. Manfredini; Nature **163**, 991 (1949).

2) C. M. G. Lattes, G. P. C. Occhialini and C. F. Powell; Nature **160**, 453 (1947).

47. Study on Pulse Shapes of Alpha-ray Counter with Ionization Chamber and Linear Amplifier.

Yoshiaki Uemura, Ryutaro Ishiwari and *Kazunori Yuasa.*

The pulse shapes of alpha-ray counter with ionization chamber and linear